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**Statement of
LeRoy M. Graham, MD, FCCP**

**before the
Subcommittee on Health and the Environment
and the
Subcommittee on Oversight and Investigations**

**Washington, DC
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**When You Can't
Breathe,
Nothing Else
Matters®**

Founded in 1904, the
American Lung Association
includes affiliated associations
throughout the U.S., and a
medical section, the
American Thoracic Society.

Mister Chairman and members of the subcommittees:

I am **LeRoy** M. Graham, and I am a practicing physician **from** Atlanta Georgia.

I am pleased to be here this morning to present testimony on the health impacts of ground level ozone in Metropolitan Atlanta on behalf of the American Lung Association.

The following information is provided in compliance with clause 2(g)(4) of House Rule XI of the Rules of the House of Representatives:

The American Lung Association received **\$479,757.00** in federal grants and contracts for fiscal year 1997, **\$685,606.00** in federal grants and contracts in fiscal 1996 and **\$720,749.00** in federal grants and contracts in fiscal year 1995.

The American Thoracic Society (ATS), the medical section of the American Lung Association, is a medical speciality organization with 12,600 members. Approximately 25 percent of the members reside outside of the United States. Further, approximately 50 percent of the members are clinicians and do not conduct research.

Members of ATS do compete successfully for federal research grants. Currently, no data is collected on the source of funds received by members in biomedical research. To provide an estimate, research abstracts presented at the annual **ALA/ATS** international Conference were used as surrogate data. Of the 5,627 abstracts to be presented at the May 1997 meeting, 466 abstracts were submitted by ATS members who received federal support. No current data is available on the dollar amount of this support.

Ozone is formed from the reaction of ultraviolet rays from sunlight on these compounds. Ozone is a highly reactive gas, 90 percent of which remains in the **lung** once it is inhaled. Ozone can cause both acute and chronic respiratory distress. Specifically, ozone causes irritation and inflammation of the nasal passages and linings of the lung. This irritation and inflammation decreases the effectiveness of the lung's defense mechanisms, such as the ability to trap and expel

irritating particles and infectious agents such as bacteria and viruses. This impairment in the defense mechanisms of the lung **often** results in an increase in upper and lower respiratory tract infections such as colds, sinusitis, bronchitis and pneumonia. Recent research suggests that ozone may actually delay the maturation and functional growth of our children's lungs.

Four population groups seem to be at particular risk for the harmful affects of ozone: children, the elderly, those involved in strenuous outdoor activities and individuals with underlying heart or **lung** problems. Children are a uniquely high risk group due to several factors. As a group, children spend 50% more time outdoors than do adults. A child's outdoor activity is greatest on warm sunny days when ozone levels are high. Children are typically involved in vigorous activities, breathing deeply and inhaling larger doses of ozone relative to their smaller size. Because children's lung defenses are not fully developed, the **lung** of a young child is less capable of defending against the effects of ozone and other pollutants than is an adult lung. Children are less aware of and less likely to heed the warnings their bodies might provide such as nasal irritation and shortness of breath. A child is less likely to be aware of alerts in the media warning of high ozone conditions. The narrower air passages of a child's lung enhances the impact of airways obstruction in response to pollutants when compared to those of an adult.

The EPA recently found that the dangerous effects of ozone were quite prevalent at ozone levels below the previous standard of 120 parts per billion (**ppb**) and recommended new standards of 80 ppb **averaged over** 8 hours. Using the old standards and 1990 monitoring data, the EPA cited 5 Georgia counties as having frequently excessive ozone levels. These were Dekalb, Fulton, Douglas, **Rockdale** and Richmond counties. Looking only at the Atlanta metro

area, this means 1.4 million residents live in areas where ozone levels often exceed the national standard for air safety.

Looking at Dekalb and Fulton Counties alone and using population-based disease estimates derived from the Center for Disease Control, we find:

24,000 child asthmatics

40,000 adult asthmatics

68,000 adults with chronic bronchitis or emphysema.

This means that that a substantial number of the residents of just these two counties alone are at particular risk of serious health problems directly related to ozone exposure.

Asthma accounts for about 65 percent of my practice. It is the most common chronic illness of childhood, it involves 4-6 percent of the school age population or 4-5 million children. It is the number one cause of lost school days **after** the common cold and flu. It is also the single most common diagnosis of patients admitted to emergency department at Scottish Rite **Childrens'** Medical Center where I practice. Asthma accounts for 21% of all hospitalizations at Scottish Rite.

The 80's and early 90's brought incredible insights and remarkably new and more effective treatments to the management of asthma. During the same period, the prevalence of asthma increased dramatically. In May of 1996, the Center for Disease Control (CDC) published

data showing that the death rate for asthma had increased 118% (~~from~~ 1.7 to 3.7 deaths per 100,000). Most of this increase occurred in asthmatics less than 25 years of age. The increase was highest in the African American population between the ages of 15 and 24. This population is often concentrated along central high density transportation corridors in our center cities.

Mary White, a researcher at the Center for Disease Control studying admissions to the pediatric emergency room at Grady hospital in Atlanta during the summer months, found that asthma admissions increased an average of 37% in the 24 hours following a day when ozone levels averaged over a single hour exceeded the current EPA standard.

Looking at the broader category of lung disease in general, lung disease is the third leading cause of death in the US. In the last decade, deaths due to lung disease have increased faster than any other cause, including cancer and heart disease. In Los Angeles and New York, 2 to 5 percent of daily mortality is attributed to ozone and other air pollutants. Nationally, the American Lung Association estimates that, in 1990, health costs of air pollution to be \$50 billion each year.

On a personal note, I have seen both as a physician and a parent, missed vacations, field trips, parties, school days, little league and soccer games as a result of a child's sudden and unpredictable asthma exacerbation. I have seen hard working families who have scrimped and saved for family vacations, both parents carefully arranging time off from work, only to have plans ruined by a child's respiratory difficulties. It is heart-wrenching to tell a hospitalized child that they won't be well enough to be discharged in time for a play performance they have

rehearsed for months. Many single parents in my practice are often forced to lose work days and wages because of the lack of affordable sick-child care for their asthmatic son or daughter.

I have seen a steady rise in hospital admissions within my practice and sadly even a few deaths. While the causes are clearly multifactorial, there can be no denying that the trend is at least related to air pollution.

Our children are helpless, they can't vote, they don't attend town hall meetings. They do depend on us to do the right thing -- to protect them. I have heard **unconfirmed** quotes attributed to some such as "so what if there is a few more days we can't go outside." That is doomsday talk. Children need adults to realize that poorly planned urban growth and its accompanying air pollution has many costs and brings with it the responsibility to make wise choices for the future.

It just shouldn't hurt to go out to play on a warm sunny day.

Thank you.